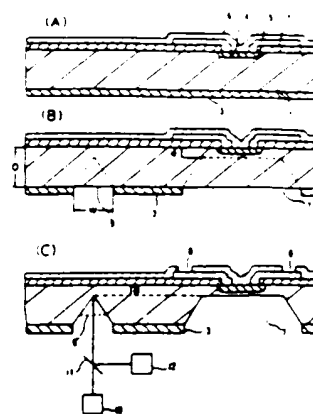


(54) MANUFACTURE OF SEMICONDUCTOR DEVICE

(11) 62-283678 (A) (43) 9.12.1987 (19) JP
 (21) Appl. No. 61-125655 (22) 2.6.1986
 (71) NISSAN MOTOR CO LTD (72) HIDETOMO NOJIRI
 (51) Int. Cl. H01L29/84, H01L21/306

PURPOSE: To accurately and easily form the necessary thickness of a thin film in case of etching by simultaneously etching predetermined parts except a thin film structure of a semiconductor substrate, emitting a light to the predetermined part during etching to detect the depth of etching, thereby controlling the etching.

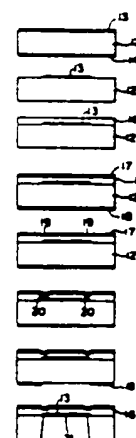
CONSTITUTION: Silicon oxide films 2, 3 are formed on upper and lower surfaces of an N-type Si semiconductor substrate 1, and a P-type diffused resistance region 4, an aluminum wiring layer 5 and a PSG film 6 are formed. Then, a diaphragm 7 and the film 3 of an etching end point detecting region 9 are removed by photoetching, with the film 5 as a mask it is etched. A light is emitted perpendicularly from a light source 10 through an optical system 11 to the region 9 during the etching, and the reflected light is detected by a photodetector 12. An etchant uses a crystal surface selective etchant. Accordingly, the reflected light is generated with respect to an incident direction while the surface perpendicular to the incident direction of the light as designated by a broken line 9' remains on the way of etching, but when a V-shaped groove is completed, the reflection of the incident direction becomes almost naught.

**(54) MANUFACTURE OF SEMICONDUCTOR PRESSURE SENSOR**

(11) 62-283679 (A) (43) 9.12.1987 (19) JP
 (21) Appl. No. 61-127723 (22) 2.6.1986
 (71) FUJIKURA LTD (72) HIROKAZU HASHIMOTO
 (51) Int. Cl. H01L29/84, H01L21/306

PURPOSE: To reduce the irregularity of the thickness of a diaphragm by growing a semiconductor layer on a semiconductor substrate on which an etching stop layer is formed on a predetermined region, forming a gauge resistor on the layer, and etching from the lower surface of the substrate to the stop layer.

CONSTITUTION: SiO₂ films 13, 14 are formed on the upper and lower surfaces of an N-type silicon wafer 12, and an SiO₂ film 13 remains in a circular shape at the center on the upper surface of a photolithography. Then, an N-type silicon is epitaxially grown on the upper surface of a wafer to form a semiconductor layer 16. Then, SiO₂ films 17, 18 are formed on the upper and lower surfaces of the wafer, and a diffusing window 19 is formed at the film 17 by photolithography. Then, the wafer is disposed in a diffusing furnace, boron is supplied, and a gauge resistor 20 is formed. Thereafter, the center of the film 18 on the lower surface of the substrate 1 is removed by photolithography. Then, the wafer is etched from the lower surface with an etchant to form a diaphragm 21.

**(54) SEMICONDUCTOR DEVICE**

(11) 62-283680 (A) (43) 9.12.1987 (19) JP
 (21) Appl. No. 61-126507 (22) 31.5.1986
 (71) MITSUBISHI ELECTRIC CORP (72) KAZUO MIZUGUCHI
 (51) Int. Cl. H01L31/04

PURPOSE: To effectively reduce the reflection coefficient of a semiconductor device by utilizing a multiple reflections by forming a texture structure on a single crystal silicon substrate, and forming an active layer made of compound semiconductor thereon, thereby forming the upper layer of the active layer as an active layer of high quality.

CONSTITUTION: A texture (pyramidlike uneven surface) structure is formed on a single crystal Si (100) substrate 1. The substrate 1 is treated with an aqueous solution of 60% hydrazine (N₂H₄), and the texture structure is obtained even by treating with an aqueous solution of 1% NaOH. After an active layer 2 of compound semiconductor, such as GaAs thin film is epitaxially grown, for example, by an MOCVD method (vapor growth using organic metal) by the substrate 1, a reflection preventive film 3 and electrodes are formed.

